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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,904	12/23/2004	Takehiko Tanabu	43890-713	3296

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EXAMINER
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SAUNDERS JR, JOSEPH

ART UNIT	PAPER NUMBER
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2194

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/518,904	TANABU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph Saunders	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12-23-04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This is the initial office action based on the application filed on December 23, 2004. Claims 1 – 4 are currently pending and considered below.

### ***Specification***

2. The disclosure is objected to because of the following informalities: In the summary of the invention when referring to how the different components of the speaker are connected the applicant describes the connections in a manner that is inconsistent with the drawings. For example, Page 3 of the specification Line 14 “a ring-shaped first magnet being coupled with a lower surface of an outer periphery of the yoke” should be “a ring-shaped first magnet being coupled with a upper surface of an outer periphery of the yoke”. The same problem occurs in the following locations: On Page 3 Line 18 “a lower” should be changed to “an upper”, Line 20 “an upper” should be changed to “a lower”, Line 22 “a lower” should be changed to “an upper”, Line 24 “an upper” should be changed to “a lower”, and Page 4 Line 4 “an inner” should be changed to “an outer”. The same problems occur when describing the second exemplary embodiment and the first and second claims.

On page 6 of the specification the use of abbreviations/acronyms ABS and PBT alone is inappropriate since it renders the specification indefinite. If abbreviations/acronyms are to be used the full meaning should be conveyed, for example, polybutylene terephthalate (PBT) and acrylonitrile butadiene styrene (ABS).

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 - 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1 and 2 are described in a manner that is not consistent with the drawings as mentioned above in the objection to the written specification. For example, in claims 1 and 2 "a ring-shaped first magnet being coupled with a lower surface of an outer periphery of the yoke" should be "a ring-shaped first magnet being coupled with a upper surface of an outer periphery of the yoke". The same corrections required of the specification should be made to the claims. The examiner will interpret the claims as represented by the drawings.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 - 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Miyamoto et al. (US 6,744,895 B2) in view of Han et al. (US 2002/0071590 A1).

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**Claim 1:** Miyamoto discloses a loudspeaker comprising: a hollow frame (case 21) having opening sections at its upper side and lower side; a hat-shaped yoke (pole piece 22) whose both ends are supported by an inner wall of the frame; a ring-shaped first magnet (annular first permanent magnet 23) being coupled with a lower surface of an outer periphery of the yoke; a columnar second magnet (disc shaped second permanent magnet 25) being coupled with an inner bottom of a middle section of the yoke; a ring-shaped first plate (annular first top plate 24) being coupled with a lower surface of the first magnet; a plate-type second plate (second top plate 26) being coupled with an upper surface of the second magnet; a first diaphragm (second diaphragm 30) whose outer periphery is fixed to a lower opening of the frame; a second diaphragm (first diaphragm 27) whose outer periphery is fixed to an upper opening of the frame; a ring-shaped first voice coil (annular second voice coil 33) whose one end is fixed to the first diaphragm (second diaphragm 30) and other end is placed at a first magnetic gap (annular second magnetic gap 35) formed between an inner peripheral surface of the first plate (annular first top plate 24) and an outer peripheral surface of the middle section of the yoke (pole piece 22c); and a second voice coil (annular second voice coil 32) whose one end is fixed to the second diaphragm (first diaphragm 27) and other end is placed at a second magnetic gap (annular first magnetic gap 34) formed between an inner peripheral surface of the second plate (second top plate 26) and an inner peripheral surface of the middle section of the yoke (pole piece 22c).

Miyamoto does not disclose wherein the frame is integrated with the yoke in assembling the frame. Han discloses a magnetic circuit 500 for a micro speaker in which a speaker

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frame 400 is formed through injection molding to secure the yoke part 100, magnet 200, and upper plate 300 (Figure 6). Since the object of Miyamoto's invention is to provide a loudspeaker that will produce sufficient volume without increasing the size of the loudspeaker (Column 1 Lines 65 – 67), it would have been obvious to one of ordinary skill in the art at the time of the invention to secure the magnetic circuit of Miyamoto to the case in a manner disclosed by Han since Han's invention allows for a yoke part, a magnet placed upon the yoke part, and an upper plate placed upon the magnet to be coupled to a speaker frame resulting in a slim, firmly connected product without requiring a separate coupling of the components by means of an adhesive (Paragraph 11).

**Claim 2:** Miyamoto discloses a loudspeaker comprising: a hollow frame (case 21) having opening sections at its upper side and lower side; a hat-shaped yoke (pole piece 22) whose both ends are supported by an inner wall of the frame; a ring-shaped first magnet (annular first permanent magnet 23) being coupled with a lower surface of an outer periphery of the yoke; a columnar second magnet (disc shaped second permanent magnet 25) being coupled with an inner bottom of a middle section of the yoke; a ring-shaped first plate (annular first top plate 24) being coupled with a lower surface of the first magnet; a plate-type second plate (second top plate 26) being coupled with an upper surface of the second magnet; a first diaphragm (second diaphragm 30) whose outer periphery is fixed to a lower opening of the frame; a second diaphragm (first diaphragm 27) whose outer periphery is fixed to an upper opening of

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the frame; a ring-shaped first voice coil (annular second voice coil 33) whose one end is fixed to the first diaphragm (second diaphragm 30) and other end is placed at a first magnetic gap (annular second magnetic gap 35) formed between an inner peripheral surface of the first plate (annular first top plate 24) and an outer peripheral surface of the middle section of the yoke (pole piece 22c); and a second voice coil (annular second voice coil 32) whose one end is fixed to the second diaphragm (first diaphragm 27) and other end is placed at a second magnetic gap (annular first magnetic gap 34) formed between an inner peripheral surface of the second plate (second top plate 26) and an inner peripheral surface of the middle section of the yoke (pole piece 22c).

Miyamoto does not disclose wherein the frame is integrated with an outer peripheral part of a connected-component which is formed by coupling the yoke with the first magnet and the first plate. Han discloses a magnetic circuit 500 for a micro speaker in which a speaker frame 400 is formed through injection molding to secure the yoke part 100, magnet 200, and upper plate 300 (Figure 6). Since the object of Miyamoto's invention is to provide a loudspeaker that will produce sufficient volume without increasing the size of the loudspeaker (Column 1 Lines 65 – 67), it would have been obvious to one of ordinary skill in the art at the time of the invention to secure the magnetic circuit of Miyamoto to the case in a manner disclosed by Han since Han's invention allows for a yoke part, a magnet placed upon the yoke part, and an upper plate placed upon the magnet to be coupled to a speaker frame resulting in a slim, firmly connected product without requiring a separate coupling of the components by means of an adhesive (Paragraph 11).

**Claim 3:** Miyamoto in view of Han disclose the loudspeaker of claim 1, and Han further discloses wherein at least one of an upper surface of the yoke and a lower surface thereof is integrated as a reference plane in mounting for a mold of the frame (Securing part 130 Figure 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to also incorporate the securing part 130 when using the speaker frame of Han to secure the magnetic circuit of Miyamoto's speaker since the securing part 130 is vital feature which allows for the securing of the yoke part, magnet, and top plate by the speaker frame (Paragraph 37).

**Claim 4:** Miyamoto in view of Han disclose the loudspeaker of claim 2, and Han further discloses wherein at least one of an upper surface of the yoke and a lower surface thereof is integrated as a reference plane in mounting for a mold of the frame (Securing part 130 Figure 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to also incorporate the securing part 130 when using the speaker frame of Han to secure the magnetic circuit of Miyamoto's speaker since the securing part 130 is vital feature which allows for the securing of the yoke part, magnet, and top plate by the speaker frame (Paragraph 37).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:




Mitobe (5,099,949) discloses a speaker and manufacturing method therefor where the second frame piece is integrally combined with the driver unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on (571) 270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS   
July 24, 2006

  
James W. Myhre  
Supervisory Patent Examiner